

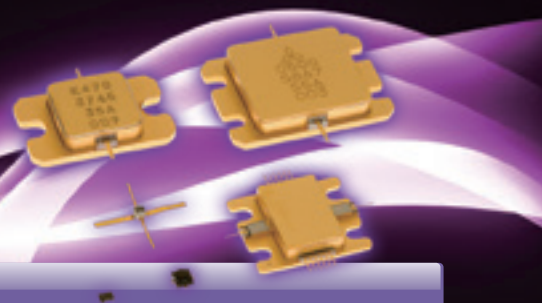
## HIGH FREQUENCY DEVICES



# High Frequency Devices

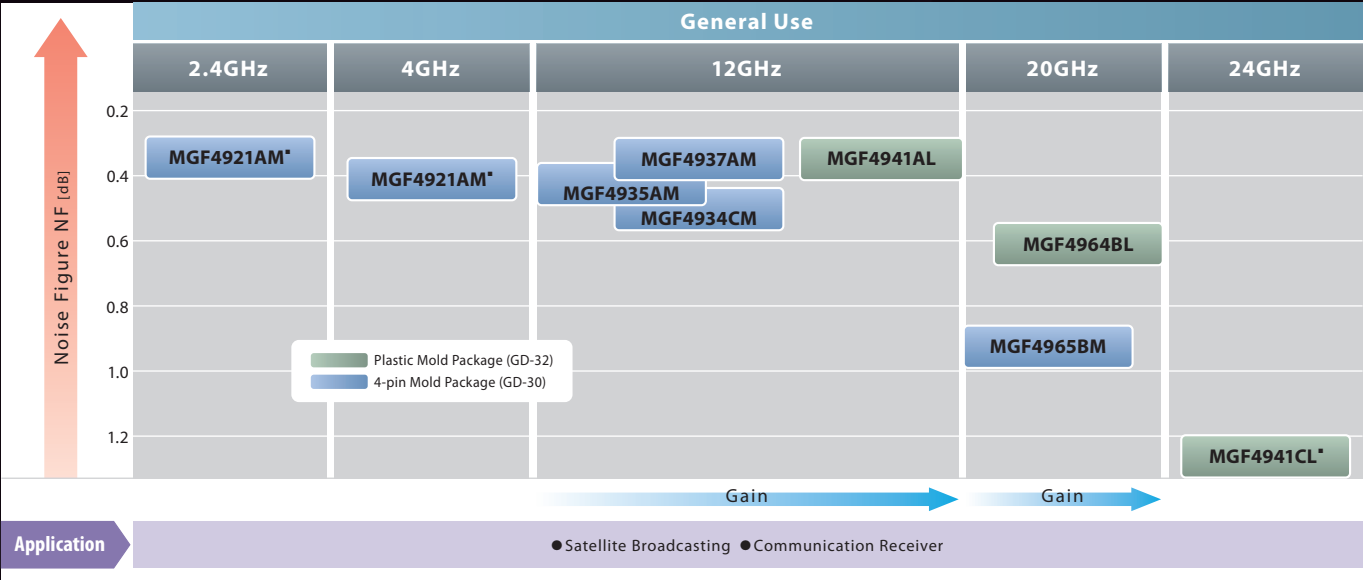
# The Best Solution for Realizing the Information and Communication Era

Communication networks, such as high speed Internet, and high-speed data communication, are developing rapidly. We are ready to offer the best solution to the systems for realizing the information and communication era by providing of the GaN/GaAs products.



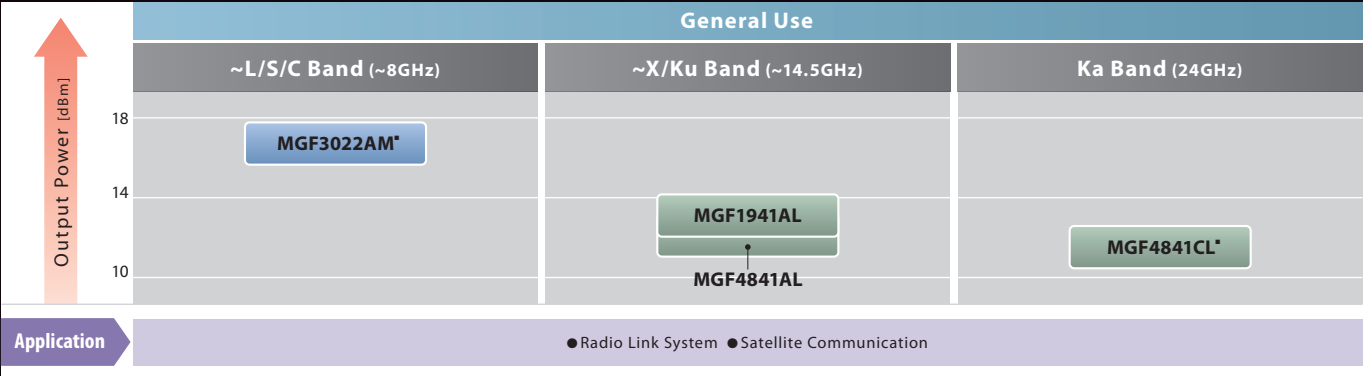
## SELECTION MAP

### ■ GaAs HEMT SERIES FOR MICROWAVE-BAND LOW-NOISE AMPLIFIERS (Discrete)



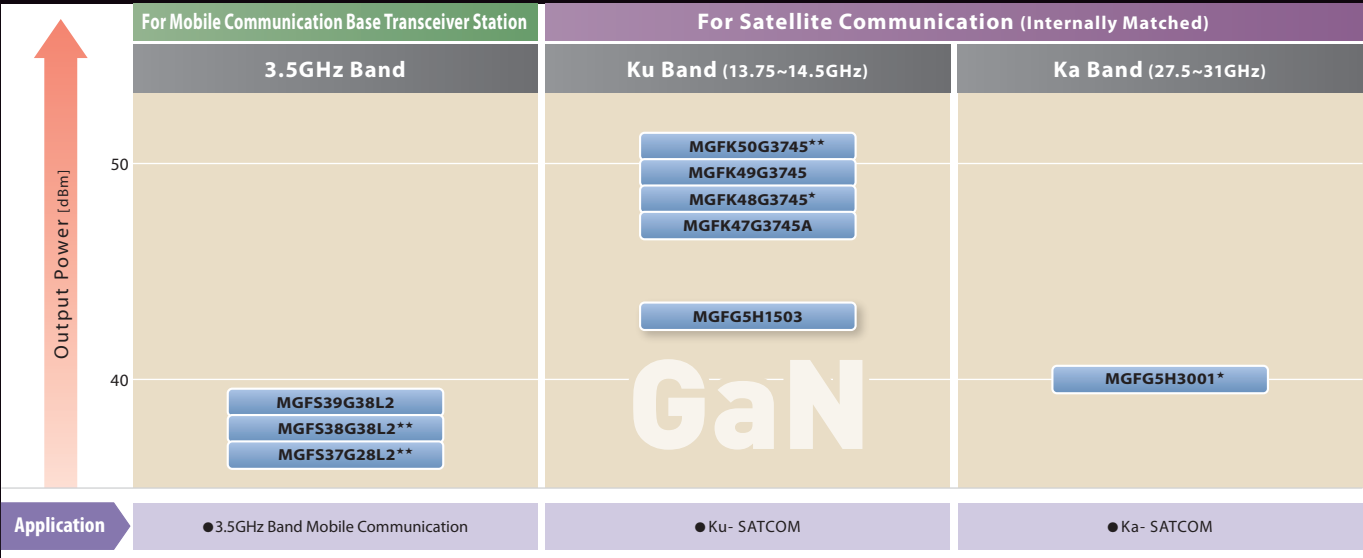
■ AEC-Q101 qualified FET: Field Effect Transistor HEMT: High Electron Mobility Transistor HBT: Heterojunction Bipolar Transistor

### ■ GaAs HEMT/MES FET, InGaP HBT SERIES FOR SMALL SIGNAL AMPLIFIERS (Discrete)



■ AEC-Q101 qualified

### ■ GaN HEMT SERIES FOR MICROWAVE-BAND HIGH POWER AMPLIFIERS



★: New Product ★★: Under Development

Partially supported by Japan's New Energy and Industrial Technology Development Organization(NEDO).

# PRODUCT LIST

## GaAs HEMT SERIES FOR MICROWAVE-BAND LOW-NOISE AMPLIFIERS (Discrete)

GD-30

GD-32



Type Number	Noise Figure [dB]		Associated Gain [dB]		Frequency [GHz]	Drain-Source Voltage [V]	Drain Current [mA]	Package Outline
	Typ.	Max.	Min.	Typ.				
MGF4921AM*	0.35	0.55	11.5	13.0	4	2	10	GD-30
MGF4934CM	0.50	0.75	11.5	13.0	12	2	10	GD-30
MGF4935AM	0.45	0.65	11.0	12.0	12	2	10	GD-30
MGF4937AM	0.35	0.50	11.5	13.0	12	2	10	GD-30
MGF4941AL	0.35	0.50	12.0	13.5	12	2	10	GD-32
MGF4964BL	0.65	0.90	11.5	13.5	20	2	10	GD-32
MGF4965BM	0.95	1.25	9.5	11.5	20	2	10	GD-30
MGF4941CL*	2.40	3.80	7.5	10.0	24	1.5	Idss	GD-32

Ta=25°C ■: AEC-Q101 qualified

## GaAs HEMT/MES FET, InGaP HBT SERIES FOR SMALL SIGNAL AMPLIFIERS (Discrete)

GD-30

GD-32



Type Number	Output Power at 1dB Gain Compression [dBm]		Output Power [dBm]	Linear Power Gain [dB]	3rd Order IM Distortion [dBc]		Power Added Efficiency [%]	Frequency [GHz]	Drain-Source Voltage [V]	Drain Current [A]	Thermal Resistance [°C/W]		Package Outline
	Min.	Typ.			Min.	Typ.					Typ.	Max.	
MGF1941AL	11.0	15.0	—	10.0	—	—	—	12	3	0.03	—	—	GD-32
MGF4841AL	11.5	14.5	—	12.0	—	—	—	12	2.5	0.025	—	—	GD-32
MGF4841CL*	—	11.5	—	8.5	—	—	—	24	1.5	Idss	—	—	GD-32
MGF3022AM*	14.0	16.5	—	18.0	—	—	—	2.4	3	0.033	—	—	GD-30

Ta=25°C ■: AEC-Q101 qualified

## GaN HEMT SERIES FOR MOBILE COMMUNICATION BASE TRANSCEIVER STATION

GF-67



Type Number	Output Power [dBm]	Linear Power Gain [dB]	Power Added Efficiency [%]	Frequency [GHz]	Drain-Source Voltage [V]	Thermal Resistance [°C/W]		Package Outline
						Typ.	Max.	
MGFS39G38L2	39	20	67	3.4~3.8	50	—	10.2	GF-67
MGFS38G38L2**	38	20	67	3.4~3.8	50	—	11.7	GF-67
MGFS37G38L2**	37	20	67	3.4~3.8	50	—	13.5	GF-67

Ta=25°C ★★: Under Development

## GaN HEMT SERIES FOR SATELLITE COMMUNICATION (Internally Matched)

GF-8

GF-38

GF-65

GF-71



Type Number	Output Power [dBm]	Linear Power Gain [dB]	3rd Order IM Distortion [dBc]		Power Added Efficiency [%]	Frequency [GHz]	Drain-Source Voltage [V]	Drain Current [A]	Thermal Resistance [°C/W]		Package Outline
			Min.	Typ.					Typ.	Max.	
MGFK50G3745**	50	10	-25	—	30	13.75~14.5	24	2.4	T.B.D.	T.B.D.	GF-38
MGFK49G3745	49	7.5	-25	—	28	13.75~14.5	24	2.1	0.4	0.6	GF-38
MGFK48G3745*	48.3	9.3	-25	—	33	13.75~14.5	24	1.44	0.8	1.0	GF-8
MGFK47G3745A	47	9	-25	—	30	13.75~14.5	24	1.05	1.1	1.4	GF-8
MGFG5H1503	43	20	-25	—	18	13.75~14.5	24	2.7	1.2	1.5	GF-65
MGFG5H3001*	39	15	-25	—	12	27.5~31	24	1.5	2.0	T.B.D.	GF-71

Ta=25°C ★: New Product ★★: Under Development

## TYPE NAME DEFINITION OF HIGH FREQUENCY DEVICES

### Discrete

MGF 49 41 A L

A B C D

A Device Structure — 1x: MES FET (Small Signal)  
3x: HBT  
4x: HEMT

B Chip Type  
C Series Number  
D Auxiliary Symbol

### For Mobile Communication Base Transceiver Station

MGF S 39 G 38 L 2

A B C D E F

A Freq. Band — S  
B Output Power in dBm — ex. 39=39dBm  
C Device Structure — G: GaN HEMT  
D Freq. Band in GHz — ex. 38=3.8GHz  
E Package — L: QFN  
F Input / Output Pair — ex. 2=Input / Output 2 Pairs

### For Satellite Communication (Internally Matched)

MGF K 50 G 3745

A B C D

A Freq. Band — Ku  
B Output Power in dBm — ex. 50=50dBm=100W(typ.)  
C Device Structure — G: GaN HEMT  
D Freq. Band in GHz — ex. 3745=13.75~14.5GHz

High Frequency devices are compliant with the RoHS (2011/65/EU).

RoHS: Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment

# HIGH FREQUENCY DEVICES

Please visit our website for further details.

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for a greener tomorrow

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## MITSUBISHI ELECTRIC CORPORATION

HEAD OFFICE: TOKYO BLDG., 2-7-3, MARUNOUCHI, CHIYODA-KU, TOKYO 100-8310, JAPAN  
[www.MitsubishiElectric.com](http://www.MitsubishiElectric.com)